

CLAIMS

What is claimed is:

1. Microchip fabrication apparatus for processing a wafer comprising:

a chamber for processing the wafer;

a plurality of lift mechanism pins within the chamber for supporting the wafer; and

a plurality of sensors associated with said lift mechanism pins for detecting the wafer position.

2. The apparatus as claimed in claim 1 wherein the plurality of sensors comprises capacitive sensors.

3. The apparatus as claimed in claim 1 wherein pairs of the plurality of sensors detect the wafer.

4. The apparatus as claimed in claim 1 wherein each of the plurality of sensors comprises a capacitive proximity sensor for detecting the wafer independent of the other capacitive proximity sensors.

67,200-662  
2001-0580

5. The apparatus as claimed in claim 1 wherein the plurality of sensors comprises optical sensors.

6. A method of detecting an out of position wafer in a microchip fabrication chamber including a pedestal adapted for retention of a wafer thereto and a plurality of lift mechanism pins adapted to effect wafer to pedestal disengagement and engagement, the method comprising the steps:

providing wafer sensing means associated with at least one of said plurality of lift mechanism pins; and

during a period when the lift mechanism pins are in a wafer disengaged position relative to the pedestal, sensing the presence of the wafer with respect to said at least one of the plurality of lift mechanism pins having the wafer sensing means.

7. The method of detecting an out of position wafer in a microchip fabrication chamber as claimed in claim 6 wherein sensing the presence of the wafer comprises capacitive sensing.

67,200-662  
2001-0580

8. The method of detecting an out of position wafer in a microchip fabrication chamber as claimed in claim 6 wherein sensing the presence of the wafer comprises optical sensing.

9. The method of detecting an out of position wafer in a microchip fabrication chamber as claimed in claim 6 wherein the period when the lift mechanism pins are in a wafer disengaged position relative to the pedestal corresponds to a period prior to chamber processing.

10. The method of detecting an out of position wafer in a microchip fabrication chamber as claimed in claim 6 wherein the period when the lift mechanism pins are in a wafer disengaged position relative to the pedestal corresponds to a period subsequent to chamber processing.

11. Microchip fabrication apparatus having a chamber including a pedestal with a surface adapted to retain a wafer in a processing position and a plurality of lift mechanism pins adapted to breach the surface of the pedestal, the pins further having respective tips adapted for contact with the wafer from a back side thereof to effect wafer to pedestal disengagement and engagement, the improvement comprising:

the tip of at least one of said plurality of lift mechanism pins having sensing means for detecting the proximity of the wafer.

12. The apparatus as claimed in claim 11 wherein sensing means comprises capacitive sensors.

13. The apparatus as claimed in claim 11 wherein the sensing means comprises respective pins.

14. The apparatus as claimed in claim 12 wherein the sensing means comprises a probe electrode through a central longitudinal bore of a respective pin.